MR. P. C. FINLAY

IOCC

IRON ORE COMPANY OF CANADA


SUDBURY
M-S-A
PHONE
MINE RESCUE
MERGEN
OPES

Aerial View Schefferville

Aerial View Sept-Iles

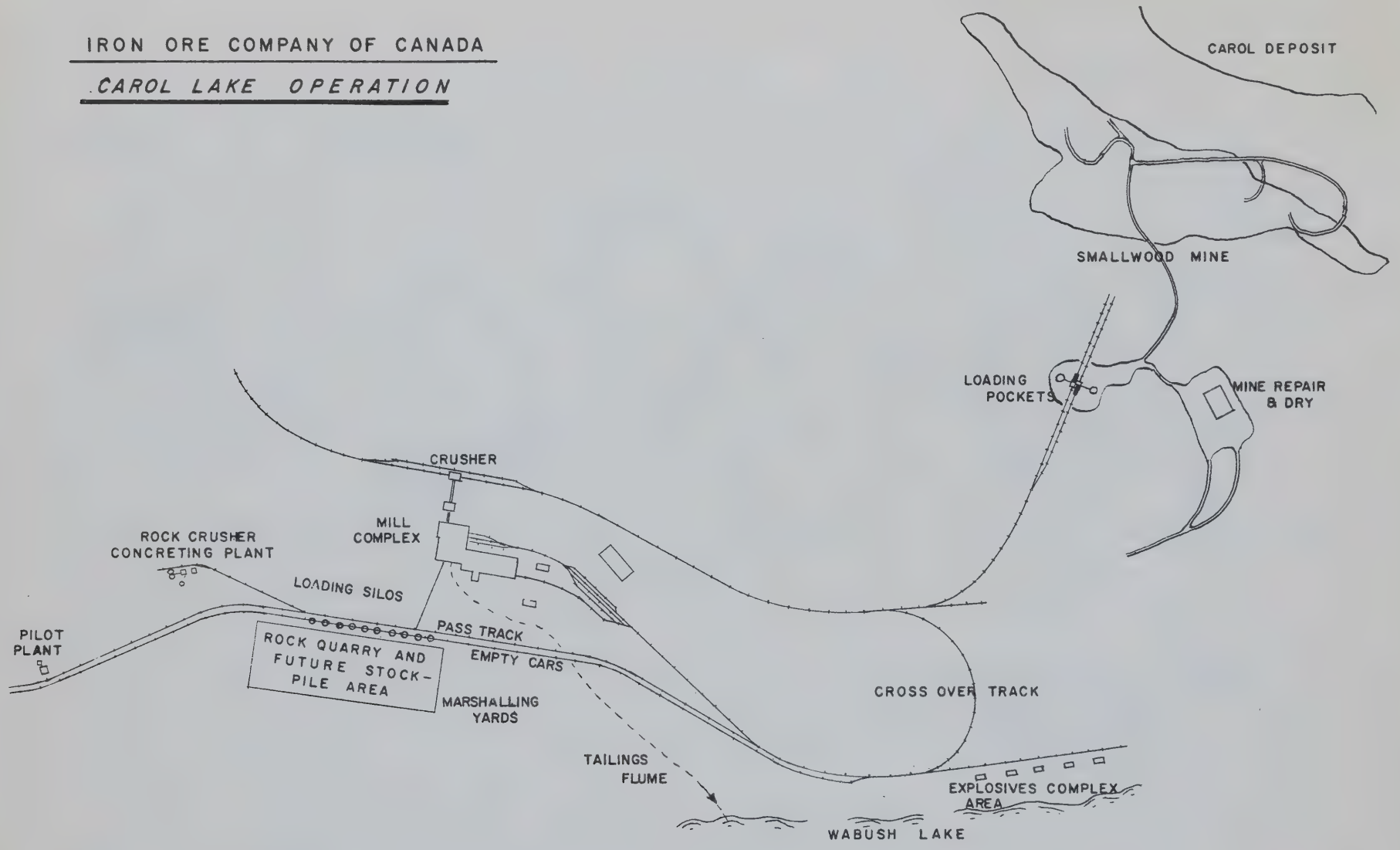
Q.N.S. & L Shop Sept-Iles

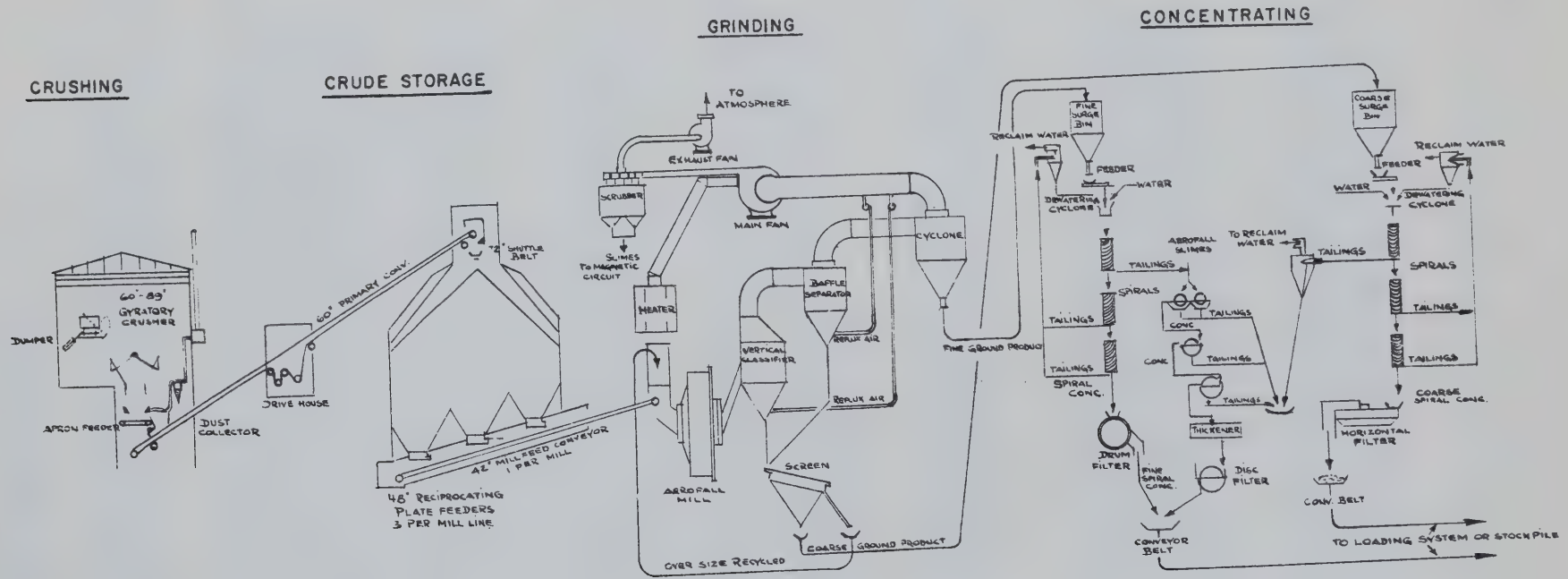
Moisie Crossing Mile 12
Q. N. S. & L.

Gamache Catholic High School

IRON ORE COMPANY OF CANADA

CAROL LAKE OPERATION





IRON ORE COMPANY OF CANADA
FLOW SHEET
CAROL PLANT

AR16

IRON ORE COMPANY OF CANADA

CAROL MINING DIVISION

This Division of the Company is situated wholly within Newfoundland - Labrador, near the west shore of Wabush Lake, some 38 rail miles west of Mile 224 on the QNS&L main line to Schefferville.

The Company commenced work in the area in 1949 but it was not until late 1959 that it was decided to proceed with mining operations. The ore deposits consist of various mixtures of specular hematite, magnetite and quartz and the crude ore, which contains approximately 37% iron, must be concentrated to a high-grade product.

The ore deposits are large and are located on a range of hills rising between 500 and 1000 feet above adjacent lakes. The ore is covered with only a few feet of overburden. Indicated reserves are well over a billion tons.

A large ore concentrator, capable of producing some 7 million tons iron ore concentrates yearly is now under construction. The concentrates will contain about 64% natural iron and the plant is scheduled for production in 1962.

The Carol project work is divided among four main departments: operations, mill, engineering and maintenance. Serving these are administration and Industrial Relations. Emphasis to date has been on mine planning and development, ore concentrating studies and construction including railroads and roads.

OPERATIONS

This Department is responsible for all rock, ore and dirt moving projects such as railroad and road building, the mining of ore for pilot plant feed, excavation for the millsite and industrial area, mine stripping, etc.

MILL

Tests are currently being made on all possible methods of crude ore concentration. Both wet and dry processes are being studied. A pilot plant commenced operations in July 1959 and has been testing the various types of ore present in the area. Construction of the primary crusher, ore storage and concentrating mill started in the spring of 1960.

ENGINEERING

This Department is primarily concerned with the development and planning of the mining operations including the layout of roads, railroads, ore loading facilities, etc. It is also concerned with the design of the townsite, industrial area and various mine structures.

MAINTENANCE

It is the responsibility of this Department to maintain all the mechanical and electrical equipment used by other divisions. Maintenance also operates the temporary diesel-powered electrical generating plant.

June 1961

IRON ORE COMPANY OF CANADA
AND
ASSOCIATES

Historical Data

1866-70

Reverend Louis Babel, O.M.I.A., surveyor-missionary, made a long journey through what is known to-day as Quebec-Labrador.

1892-95

A.P. Low, as a geologist for the Canadian Geological Survey, discovered large areas of iron formation and later on published reports on the subject.

1936

Labrador Mining and Exploration Company acquired a concession in Newfoundland-Labrador.

1942-43

Hollinger Consolidated Gold Mines acquired control of Labrador Mining and Exploration Company.

Also, Hollinger North Shore Exploration Company was formed and acquired, under licence from the Quebec Government, an area in New Quebec, adjacent to the Labrador Mining and Exploration concession.

The M.A. Hanna Company joined forces with the Hollinger interests in both exploration companies.

1947

Quebec North Shore and Labrador Railway Company was formed.

1948

Hollinger Ungava Transport Ltd. was formed.

1949

The Hollinger and M.A. Hanna interests joined with Republic, National, Armco, Youngstown and Wheeling to form the Iron Ore Company of Canada. Besides the financing provided by the partners, 19 American and Canadian insurance companies agreed to lend $150,000,000.

June 1961 P.T.O.

1950

A small steamer in the coastal trade slipped into the Bay of Sept-Iles with the first construction equipment. The tasks to be completed before the end of 1954 included:

Building of 357 miles of mainline railroad and terminal through a wilderness;
Operation and maintenance over this same wilderness of the largest civilian airlift in history;
Building and maintenance of base camps and way stations to house and feed 6900 men;
Construction of dock facilities large enough to receive raw materials as they arrived, and to ship at least 10,000,000 tons of ore a year when the project goes into operation;
Planning for and commencement of construction of two new townsites to house permanent employees;
Building of two hydro-electric plants and necessary transmission lines;
Preparation of open-pit mines for operation, construct crushing, screening and loading facilities and continuation of exploration of ore bodies.

1954

On February 13th Mr. J.R. Timmins drove in the Golden Spike symbolizing completion of the Quebec North Shore and Labrador Railway.

On July 31st the "Hawaiian" left Sept-Iles with the first shipment of Ungava iron ore.

1955

Iron Ore Company of Canada became the largest Canadian iron ore producer.

The "Vercharmian" reached the Contrecoeur Transfer Dock where iron ore is transhipped on to Great Lake canalers.

1958

Bethlehem acquired an interest in the Iron Ore Company.

1959

Mapping and drilling of the Wabush area, particularly the Carol deposit, started some years earlier, brought up the "Carol Project" with 1962 as production target.

The "Tritonica" was the first vessel loaded with iron to go through the St. Lawrence Seaway.

1960

On May 22nd was driven in the Golden Spike of the railway belonging to the Northern Land Company Ltd., linking the Carol Project to the main line of the Quebec North Shore and Labrador Railway.

On August 19th the Drying Plant at Sept-Iles started its operations.

QUEBEC NORTH SHORE & LABRADOR RAILWAY

The QNS& L. is a common carrier subject to the jurisdiction of the Board of Transport Commissioners for Canada, and provides the link between the iron mines and the terminal facilities in Sept-Iles. The contract for construction of the 357 miles of main track was awarded in September 1950 and the Golden Spike marking its completion was driven in February 1954.

Starting at tidewater at Sept-Iles, the line rises to a maximum elevation of 2,066 feet at Mileage 150 before dropping to an average elevation of 1,700 feet on the balance of the line. Maximum grade against southbound loaded cars is 11 miles at 0.4 per cent, and against northbound trains 17 miles at 1.34 per cent. Maximum curvation is 8 degrees, and over a third of the total mileage is on curved track. There are 28 sidings on the line, all equipped with power operated switches and located about 13 miles apart.

The main track is laid with 132-pound rail with 14" tie plates on 8'6" treated ties, supported by rock ballast on subgrade 24 feet wide. Paralleling the track is a pole line with two pairs of wires; the upper pair transmits power at 23,000 volts with provision for voltage stepdown at required locations, and the lower pair carries 25 telephone and teletype channels.

Main items of rolling stock are 78 1750 H.P. diesel-electric road-switcher locomotives, 3,000 solid bottom gondola ore cars, 600 miscellaneous freight, passenger and work cars. All ore cars and most of the other rolling stock are equipped with roller bearings. Short range radios are installed on locomotives and cabooses for end-to-end communications.

The Railway does its work through four main operating departments: Transportation, Maintenance of Way and Structures, Mechanical and Signals and Communications. Serving these are Administration, Catering and Industrial Relations.

TRANSPORTATION

This Department runs the trains, most of which are engaged in carrying ore trains of 125 cars loaded to about 87 long tons each for a gross weight of over 15,000 tons. Regular passenger and freight service is provided the year round, whereas the ore movement is seasonal. All train movements are directed by signal indication. The position of switches and the signals governing their use are handled under a Centralized Traffic Control system through a dispatcher's control machine at Sept-Iles which automatically provides positive block protection safety.

The loaded ore trains make the trip in about 15½ hours, empty trains in 14 hours for an average round trip speed of about 25

miles per hour including stops at Oreway, the midpoint, for crew change. Maximum daily movement to date is 110,000 tons of ore.

MAINTENANCE OF WAY & STRUCTURES

This Department, under the direction of the Engineering Office, maintains the roadbed and track, constructs new track for revisions and extensions, improves drainage on and adjacent to the line, operates ballast pits and crushing plants for the production of rock ballast. Every possible use is made of specialized mechanical equipment for maintenance of track which in a typical year has to withstand traffic totalling 10 billion ton-miles. The Bridge and Building section maintains some 2,500 culvert pipe installations and six steel bridges, one 705 feet long crossing the Moisie River 150 feet below, and provides for the up-keep of all railway buildings. A Soils Section checks sub-surface conditions on the line, and operates a laboratory for testing of concrete samples and of load bearing qualities of various soils.

MECHANICAL

This Department is responsible for the maintenance of all motive power, rolling stock and work equipment and for the inspection of trains before departure and on arrival at terminals. It operates a shop comprising three main sections: Locomotive, Car and Machinery and a Machine Shop which serves all sections. Due to the Railway's location, it has to be self sufficient and the shops are equipped to handle both light and heavy repairs of all kinds.

The Locomotive Shop includes a trip inspection bay with two through tracks fitted for ready access with elevated tracks and depressed floors, each sufficiently long to accommodate a four-unit locomotive. A heavy repair bay has a drop table for changing locomotive trucks.

The Car Shop has four sets of through tracks of about ten cars capacity each and is equipped with overhead cranes up to 30 tons capacity.

The Machinery Section occupies one bay and handles the maintenance and overhaul of all work equipment: power shovels, tractors, track raising machines and the like.

A small running repair shop is maintained at the north end of the line.

Adjacent to the Shop is the Warehouse Section which maintains stocks of thousands of items ranging from locomotive components down to tiny radio parts.

SIGNALS & COMMUNICATIONS

This Department installs and maintains the signals and power switches upon which train movements depend. The communication network comprises telephone, teletype and radio, providing long distance wire communications from Schefferville and Carol Lake through interconnecting companies at Sept-Iles. Wire communications are augmented by a 120-channel microwave system paralleling the railway line.

The Machinery Section occupies one bay and handles the maintenance and overhaul of all work equipment: power shovels, tractors, track raising machines and the like.

A small running repair shop is maintained at the north end of the line.

Adjacent to the Shop is the Warehouse Section which maintains stocks of thousands of items ranging from locomotive components down to tiny radio parts.

SIGNALS & COMMUNICATIONS

This Department installs and maintains the signals and power switches upon which train movements depend. The communication network comprises telephone, teletype and radio, providing long distance wire communications from Schefferville and Carol Lake through interconnecting companies at Sept-Iles. Wire communications are augmented by a 120-channel microwave system paralleling the railway line.

AR16

IRON ORE COMPANY OF CANADA

KNOB LAKE MINING DIVISION

The center of current mining operations is adjacent to the town of Schefferville, 320 miles due north of the port of Sept-Iles. The height of land dividing the Atlantic and Ungava watersheds in this area defines the provincial boundary between Quebec and Newfoundland-Labrador, and it is along this irregular boundary that the ore deposits are situated. Schefferville is located on the Quebec side of the boundary at 55° north latitude.

To date, forty-four separate deposits of iron ore, ranging in size from one to fifty million tons each, have been located and explored. The combined tonnage in these deposits exceeds four hundred million tons of direct shipping ore that can be extracted by open pit mining methods.

Two thirds of the reserve tonnage is located in Quebec with the remainder in Newfoundland-Labrador. Some of the ore is of premium quality and contains 65% iron, but the average content of the reserve tonnage is 53% iron.

All mining is done by open pit methods utilizing earth moving equipment including 6 and 8-cubic yard electric shovels, 34 and 40-ton diesel haulage trucks, tractors, graders and rotary drills. As the ore is removed, it is transported by trucks to screening and crushing plants where the size of ore chunks is reduced to less than six inches. From the screening plants, the ore is then moved by conveyor belts to loading pockets from where it is charged directly into rail cars.

The ore production season normally extends from May 1st to November 15th, approximately 200 days. Average daily production quota is 60,000 tons, but on occasions more than 100,000 tons will be produced in 24 hours. During the remainder of the year, when ore is not being produced, stripping of the waste rock and overburden overlying and adjacent to the ore sections is carried out. For each ton of ore mined, two tons of waste must be stripped and hauled to the dumps.

The use of large equipment requires skilled tradesmen and operators and relatively few unskilled labourers are required for minor tasks.

The mining division is subdivided into three main departments: Engineering, Operations and Maintenance. Serving these are Administration and Industrial Relations.

June 1961

ENGINEERING

The work of the Engineering Department is sub-divided into three subsections known as development, mining engineering and research.

Development covers all work of the pre-production phase of locating, mapping, trenching, drilling, sampling and other methods of appraising ore occurrences. To insure a flexible and efficient mining operation, development must be completed well in advance of the commencement of mining operations.

The work of the mining engineering section is directly related to the extraction of ore from a deposit. The annual tonnage to be produced from the various ore bodies is determined by this section to produce an ore grade which will be approximately the same as the average grade of the reserve. Engineer layouts of pits are made to achieve maximum recovery of ore in the most efficient manner. These pit layout plans serve as a guide to the pit operations personnel for removing the ore and waste in a proper sequence.

At each operating mine, there is a crew of three engineers who survey and plot on current working plans and sections the day to day progress. These engineers work directly with the pit operations personnel on grade control, sampling, and short range planning.

At the central engineering office, a staff of planning engineers is responsible for long range planning to define rail spur locations, screening plant locations, access road and service building locations, product and grade scheduling, ore reserve calculations, etc.

The research section is responsible for the continuous testing of beneficiation processes to determine which methods of treatment can be most economically applied to improve the quality of natural ores and to upgrade marginal lean ores into saleable products.

OPERATIONS

The Operations Department is responsible for extracting the ore, loading it into rail cars and moving it to a marshalling yard from where it is moved by rail to Sept-Iles. The ore must be produced to meet grade requirements for vessel cargoes which vary from day to day.

Directly associated with the mining operation is the stripping of waste, construction of haulage roads and waste dumps, control of drainage, etc.

The ore is mined from faces which average 37 feet in height. When all the ore is removed on one level and stripping of the adjacent waste rock has been completed, a sinking cut is made to establish another 37 foot face of ore and the process is repeated.

A mining unit is centered around an electric shovel and normally includes six to eight diesel haulage trucks, one or two tractors and a rotary drill. Each unit averages sixteen workmen under the supervision of a pit foreman. Several units may be operated simultaneously at each mine under the supervision of a general foreman. The Superintendent of Operations directs and coordinates the programmes at the various mines.

A rail spur connects all operating mines with the central marshalling yard and the movement of loaded and empty cars from the mines is considered as a part of the pit operation and under the supervision of the Superintendent of Operations.

At the marshalling yard, all cars loaded with ore are sampled, each sample representing six cars or approximately five hundred tons. Each sample is analyzed at the Knob Lake chemical laboratory for nine chemical constituents and the results of this analytical work are forwarded by data processing equipment to the Ore Grading Department at Sept-Iles. Sample results are usually in the hands of the ore graders six hours before actual train arrival.

IRON ORE COMPANY OF CANADA

SEPT-ILES DOCK TERMINAL

The loading dock facilities at Sept-Iles, on the North Shore of the St. Lawrence, make use of a highly mechanized system to receive the ore from the mines and load it into the ships.

The work is divided between Operations, Ore Grading, Maintenance, Yard, Laboratory and Vessel Agency. Serving these are Administration and Industrial Relations.

OPERATIONS

The ore cars, designed to carry 87 long tons of ore, arriving from the mines are individually weighed by a double electronic scale at the rate of 1 every 15 seconds and separated according to grade of ore in a 12-track classification yard with a capacity of 900 cars. From there the cars are taken out by side-arm pushers onto a single-track barney lead. The blending of the ore in the shiploading system is accomplished by bringing cars in proper sequence onto the lead from the 12 classification tracks. The cars are then pushed into a tandem rotary dumper where they are emptied at a maximum rate of 100 cars an hour. On being dumped, the ore passes through grizzly beams which divert the oversize into roll crushers and the whole is then fed onto two 60" conveyor belts. These belts carry the ore to the two mix-bins each of which has a capacity of 750 long tons. From the bins, the ore travels by two 60" conveyors with a maximum capacity of 4,500 long tons an hour each to the two travelling ship-loaders which dump directly into the holds of the ship at the loading dock.

The loading and mooring docks total 1,600 feet and afford a draught of 37 feet, at low tide, to accommodate large ore ships.

The ore to be stockpiled is taken from the dumper by a separate 48-inch conveyor system and dumped by a 60 foot high self-propelled stacker which covers a pile area of 120 X 2,000 feet on each side of the conveyor belt. Over 1,500,000 long tons of ore can be stored in the stockpile. The construction of a second stacker is nearly completed.

When shipping from stockpile, ore cars are loaded by 6-cubic yard electric shovels and go through the weighing and dumping cycle as well as the contents being re-analyzed.

ORE GRADING

is responsible for ensuring that the ore loaded into the ship conforms to customer requirements. Eight to ten hours before the train is due in Sept-Iles Ore grading receives, via teletype,

the list of cars in the train and the accurate chemical composition of the ore. On this basis, a classification plan is made out which the Hump Office will use to switch the incoming cars to the various tracks in the classification Yard. A shipping plan is also made out which, by blending the proper quantities of the various grades, will give the ship the required quality and quantity of ore.

MAINTENANCE

The mobile equipment consists mainly of 6-cubic yard electric shovels, large tractors, haulage trucks, diesel electric side-arm pushers, pick-ups and cars. The stationary equipment consists of a twin-tandem rotary dumper with associated crushers and feeders, a barney hoist, 2 travelling ship-loaders and travelling stacker. The conveyor system which ties in all these units has an overall belt length of 4½ miles in widths of 48" to 72".

YARD

The train-operating section has charge of the rolling stock and the track within Sept-Iles Terminal limits. The total length of track is approximately 50 miles.

A double and single diesel-electric unit are used to handle the ore and freight cars in the yard. Another function is the weighing of the loaded ore cars at the hump.

LABORATORY

The Laboratory is mainly concerned with chemical analysis of the ore taken from stockpile. It also works on ore research and drill core analysis.

VESSEL AGENCY

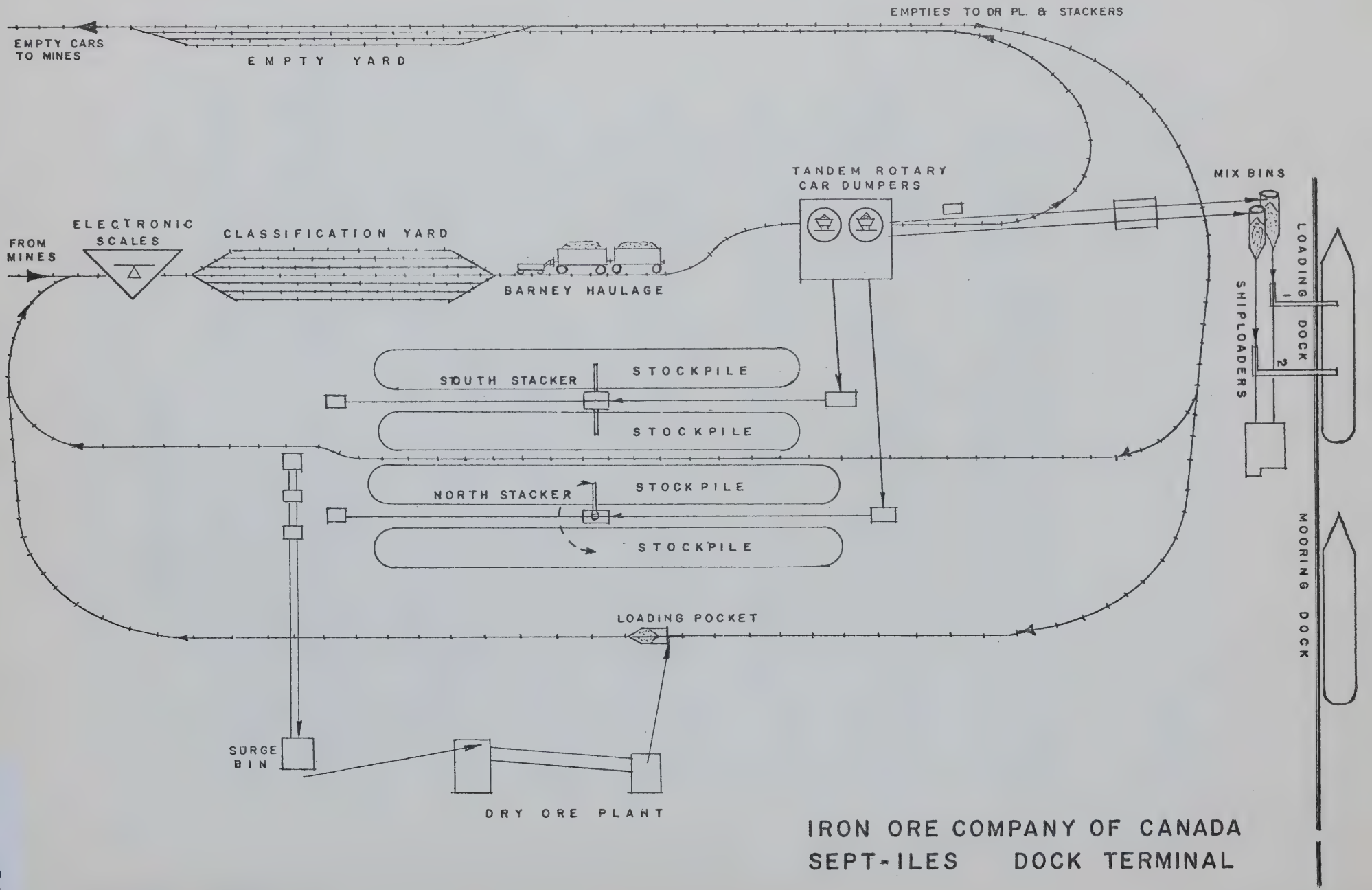
The Vessel Agency acts as agents for the ore ships and deals with their movement to and from the loading dock. It is in charge of tugs, pilots and linesmen, and makes arrangements for the loading of the ships. It also acts as independent agents for foreign general cargo ships.

FUTURE EXPANSION

Future projects include the construction of a washing plant and a second dumper.

The initial phase of the drying plant came into operation in August 1960 and has a capacity of 300 long tons of ore per hour feed.

The washing plant, planned for 1962, will treat 2,750,000 long tons of ore pre season.



IRON ORE COMPANY OF CANADA
SEPT-ILES DOCK TERMINAL

JUNE 1961

AR16

TOWN OF SEPT-ILES

Sept-Iles is located on the North Shore of the St. Lawrence River, 484 air miles North East of Montreal.

Before the advent of the Iron Ore Company of Canada, it was a small village mainly dependent on fishing, with rare communication with the outside. The population of 1,200 lived in a small cluster around the church at the head of the pier.

Now, 16,000 people call Sept-Iles their home and the city has the highest percentage of home owners in Canada. Town planning took control early in the expansion of the city and did away with the rash of temporary buildings which usually characterizes boom towns.

Approximately twenty commercial flights arrive and depart from Sept-Iles daily. A ferry service with the South Shore is in operation most of the year and the highway to Quebec City is completed.

The port is one of the busiest in Canada and comes close to Montreal in tonnage handled. The bay itself, protected by its string of seven islands, affords a safe anchorage to the largest ocean-going ships and does not ice up enough to stop navigation in winter.

Private industry has been moving in at an increasing rate over the last few years. Expansion of the town is in two main directions: industrial to the north, residential to the west.

The business section, situated close to the bay, contains a complete range of shops, hotels, department stores, restaurants, banks, cinemas and other facilities required in a city of 16,000, while the industrial section in the northern sector contains the light industry and supply firms necessary for a growing city.

Churches cater to Catholic, Anglican, United and Baptist faiths while schools from kindergarten to twelfth grade teach English and French and Catholic and Protestant children. A completely equipped 200-bed hospital to replace the existing 46-bed hospital should be in operation in 1962.

June 1961

P.T.O.

A short distance east from the town is the Moisie River, known as one of the principal salmon rivers of Canada, while forest land on the west shore of the river is being developed for summer cottage purposes. The scenic beauty of Rapide Lake and Rapide River, west of the town, is another attraction. A few miles further west, a golf course caters to fervents of the game, while in the town the Recreation Center offers swimming in a heated, Olympic-sized pool and badminton, basketball and other indoor sports in the auditorium as well as outdoor facilities. Curling and tennis enthusiasts may take advantage of the up-to-date facilities and clubrooms available for these sports while yachting is becoming increasingly popular.

	1951	1960
Evaluation	$ 150,000	$ 50,664,000
City/Town Budget	10,000	1,087,000
Population	1,200	16,000
Family Housing Units	200	2,391
Businesses	20	360
Schools	1	8
Classrooms	8	82

TOWN OF SCHEFFERVILLE

Located in the heart of the Labrador Peninsula, 320 miles due north of the port of Sept-Iles, is the town of Schefferville, named in honor of Bishop Lionel Scheffer who has established his cathedral there. The town lies between Knob and Pearce Lakes in Quebec at Latitude 54°49' N and Longitude 66°50' W, and is the center of current iron ore mining operations in this area.

Actual construction on the townsite was commenced in late 1953, but it was not until the spring of 1954, when the Quebec North Shore and Labrador railway was completed, that construction was commenced on a large scale.

The town was incorporated in 1955 under the Act to organize mining towns and since that time a mayor and four aldermen, directly responsible to the Quebec government, have administered its affairs.

Planning and layout of the town was done by the engineering division of Iron Ore Company of Canada with assistance and guidance from the Department of Mines, Quebec. A large area in the central portion of the town was reserved for future construction of schools and churches. A similar block was reserved for future development of commercial enterprises.

The residential area of the town now has approximately 650 permanent family dwellings of 12 different styles, ranging from single bungalows to four-family apartments. In addition, a trailer camp has been established and now includes approximately 75 units. The houses are necessarily of sound construction to withstand the rigors of the winter climate. All have full basements and the exterior finish of multi-coloured cedar-grain asbestos shingles and stained or painted wood trim makes it both colourful and attractive. Streets are laid out on gentle curves and are bordered by concrete sidewalks. Paving of the streets with asphalt is two-thirds completed and landscaping of lots and planting of grass and shrubs is well advanced.

In the center of the town there are now three churches and three modern school buildings. The Roman Catholic, Anglican and United Churchs are represented while one Protestant and two Catholic schools provide the necessary facilities for educating the numerous children.

The commercial area of the town includes a bank, theatre, hotel, restaurants, service stations and general department and grocery stores. Many smaller enterprises such as a news stand, hair dressing shop, jeweller, etc., are located in one large commercial building. A town hall and fire station, and a Federal post office are also situated in this sector.

June 1961

P.T.O.

Medical services are provided by a completely equipped forty-bed hospital with two doctors in attendance.

Considering the remoteness of this location, the communication facilities available are better than in many small towns of similar size. Telephones, operating through an automatic exchange, are available to all who request them and it is as easy to place a long distance call from Schefferville as it is from Montreal.

Daily commercial flights connect Schefferville to other centers. Hollinger Ungava Transport operates a service for Company personnel and freight connecting with Sept-Iles and Mont-Joli.

The Quebec North Shore and Labrador Railway operates two passenger trains per week from Sept-Iles. The rail journey of 360 miles requires approximately 10 hours in winter and 12 hours in summer.

A Community Center, constructed by the Company at a central location within the town, offers recreation and entertainment to the whole population of the area. A three-sheet, artificial ice curling rink, four bowling alleys and an Olympic-sized swimming pool are the main features. Other indoor activities include volley ball, weight lifting and badminton. During the winter months hockey and skating are enjoyed on rinks set up adjacent to the Community Center.

A private, non-commercial, bilingual radio station provides the latest world news plus taped versions of the more popular radio programmes along with music.

The population of the Schefferville area is about 5,500. Construction of permanent homes, placing of sidewalks, paving of roads and landscaping of lots is still in progress. The town, which has grown from the wilderness in the short space of six years, is modern in all respects and a far cry from the usual impression that all mining camp towns are dull, drab and lacking in modern conveniences!

	1953	1960
Evaluation	-	$ 14,850,000
City/Town Budget	-	262,000
Population	400	5,500
Family Housing Units (I.O.C.)	25	584
Businesses	1	30
Schools	1	3
Classrooms	1	40

IRON ORE COMPANY OF CANADA AND ASSOCIATES

STATISTICAL SUMMARY - AS OF JANUARY 1, 1961

DISTANCES

Sept-Iles to Schefferville:	320 air/360 rail miles
Sept-Iles to Mont-Joli:	141 air miles
Sept-Iles to Montreal:	484 air miles
Sept-Iles to Baltimore:	1,550 water miles
Sept-Iles to Rotterdam:	2,636 water miles
Sept-Iles to Labrador City:	192 air/266 rail miles
Labrador City to St. John's (Nfld)	728 air miles
Sept-Iles to St. John's (Nfld)	656 air miles

RAILWAY OPERATIONS

Diesel Locomotives:	78
Ore Cars:	3000
Ore Trains per day (1959 average):	7
Cars per train:	125
Tons of iron ore per car:	87 long tons
Curvature: 691 curves, max. 8°	44 complete circles
Ruling grade southbound:	0.4%
Ruling grade northbound:	1.3%
Top speeds:	30 MPH loaded; 40 MPH empty
Running time: 15½ hours southbound:	14 hours northbound

MINES AND EXPLORATION

Knob Lake:	Five mines were operated during 1960	
	Shovels:	11 6-yard and 8-yard electric powered
	Trucks:	74 34- and 40-ton diesel
Carol:	A Concentrator of 7 million ton capacity under construction. Production scheduled for 1962.	

TERMINAL

Dumper capacity:	100 cars per hour
2 60-inch conveyor belts:	4,000 tons/hour each
Drying Plant:	300 tons/hr.
Stockpile capacity:	3,000,000 tons
Average vessel loading capacity:	6,500 tons/hour
Loading Dock:	800 feet
Mooring Dock:	800 feet
Dredged depth at dock at mean low tide:	37 feet
Maximum tide variation:	11 to 12 feet

June 1961.

OPERATING SEASONS

Mining:	175 to 207 days
Shipping:	194 to 240 days

WORK FORCE (Complete Project)

1960 operations: average number of employees: 4130

PRODUCTION AND SHIPMENTS:

	1955	1956	1957	1958	1959	1960
	In thousands of long tons					
Production:	8,522	12,155	13,019	7,788	12,621	10,182
Shipments ex Sept-Iles:	7,722	12,023	12,436	7,967	13,059	9,831

RECORD DAYS

	In long tons					
	Sept.23	Sept.7	Oct.11	Aug.17	Oct.6	July24
Production:	74,294	98,810	106,758	71,000	103,584	101,177
	July 6	Sept.4	July 2	July 2	Oct.3	Aug.5
Shipments ex Sept-Iles:	72,173	99,971	107,503	89,491	108,954	100,392

RECORD MONTHS

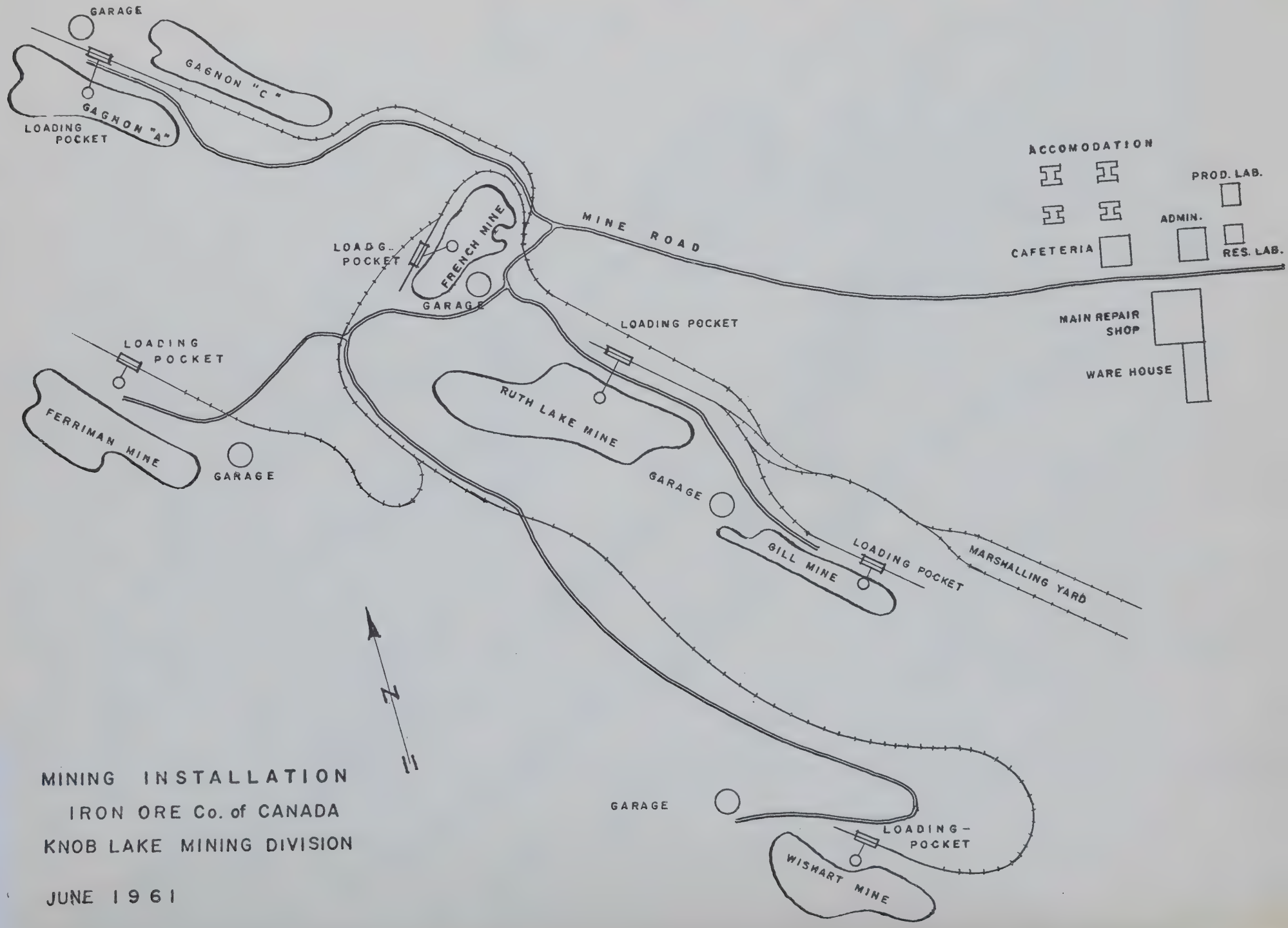
	In thousands of long tons					
	Sept.	August	August	Sept.	Sept.	August
Production:	1,798	2,393	2,508	1,646	2,624	2,114
	Sept.	Sept.	August	Sept.	Sept.	August
Shipments ex Sept-Iles:	1,358	2,111	2,307	1,453	2,570	1,975
	TARFALA	ORE REGENT	COSMIC	ORE CHIEF	ORE TITAN	COSMIC
Largest Single cargo:	25,287	40,931	44,730	53,160	54,158	46,450

	1955	1956	1957	1958	1959	1960
VESSELS LOADED:						
	652	694	716	409	700	541

RECORD LOADING TIME:

S.S. Knob Lake — 8,012 long tons per hour
2 hours, 30 minutes

PRODUCTION PERIOD:						
Start:	May 11	Apr.27	May 1	May 10	May 1	Apr.16
Finish:	Nov.14	Nov.19	Nov.14	Nov. 1	Nov.21	Oct.22
No. Days:	187	207	175	205	190	
SHIPPING PERIOD:						
Start:	Apr.24	Apr.13	Apr.22	May 5	Apr.16	Apr.16
Finish:	Nov.28	Nov.24	Nov.15	Nov.13	Dec. 1	Nov. 1
No. Days	219	226	207	194	240	199



MINING INSTALLATION

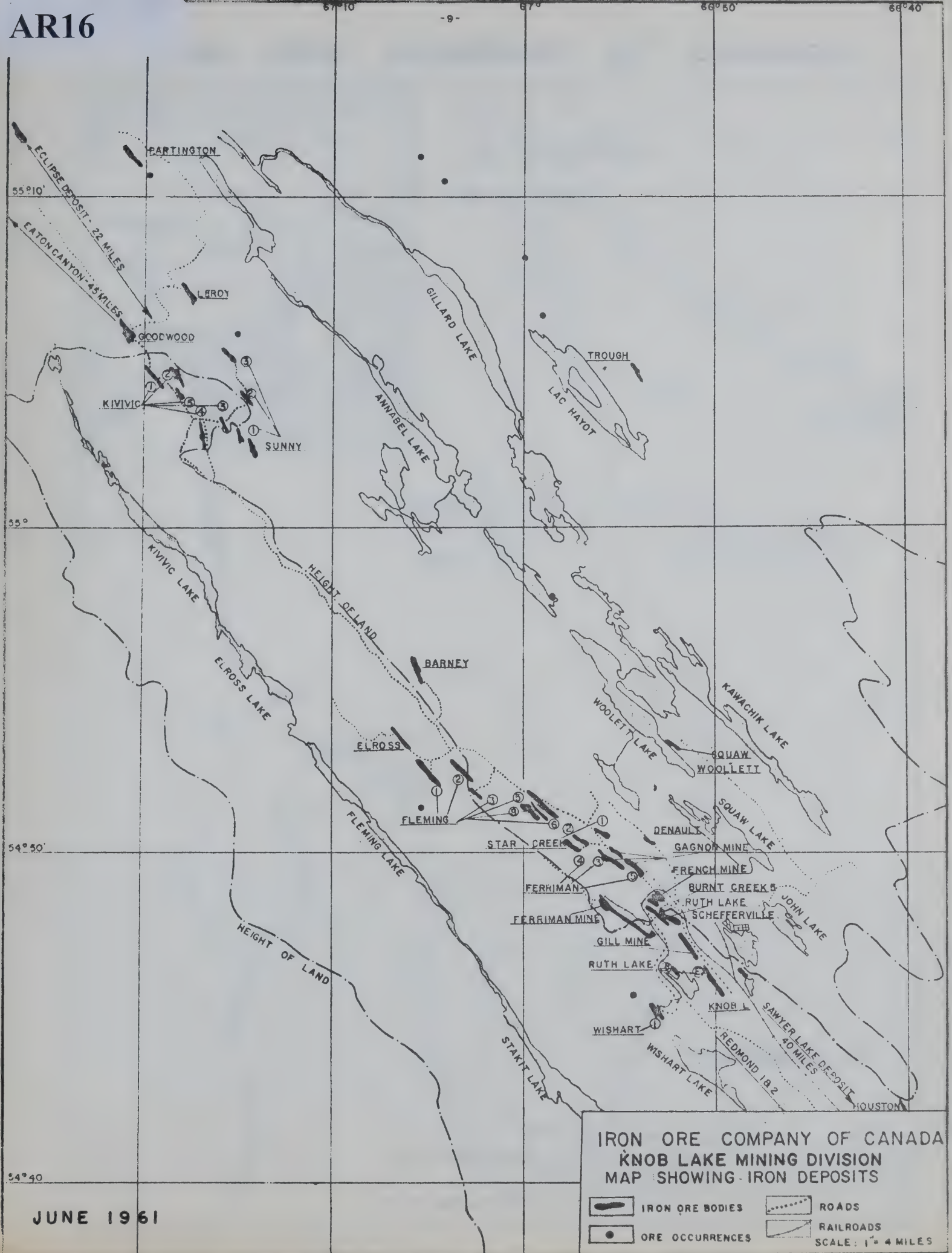
IRON ORE Co. of CANADA

KNOB LAKE MINING DIVISION

JUNE 1961

AR16

AR16



IRON ORE COMPANY OF CANADA

KNOB LAKE MINING DIVISION

MAP SHOWING IRON DEPOSITS

IRON ORE BODIES

ORE OCCURRENCES

ROADS

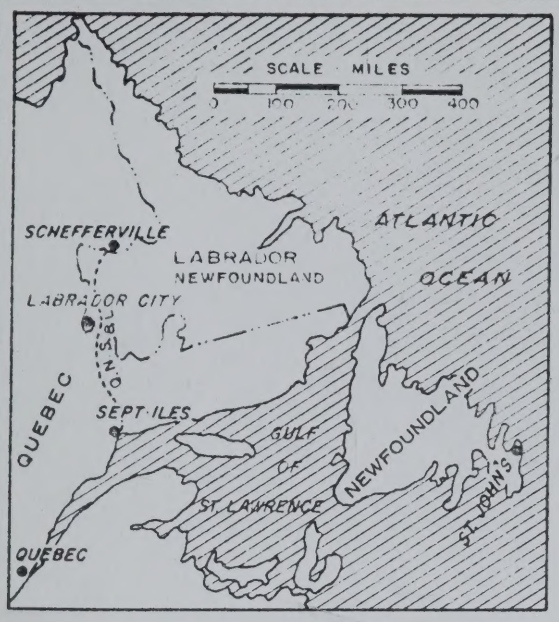
RAILROADS

SCALE: 1" = 4 MILES

JUNE 1961

AR16

IRON ORE COMPANY OF CANADA



(I.O.C.C.) SCHEFFERVILLE (KNOB LAKE)

MENIHEK

HAMILTON RIVER

ROAD

TWIN FALLS POWER CORP

LABRADOR CITY (I.O.C.C.)

ROSS BAY JCT.

WABUSH IRON

LABRADOR
NEWFOUNDLAND

QUEBEC

LAC JEANNINE (Q.C.M.)

MOISIE RIVER

RAILROAD (Q.N.S. & L.)

RAILROAD (Q.C.M.)

MANICOUAGAN RIVER

SCALE MILES
0 25 50

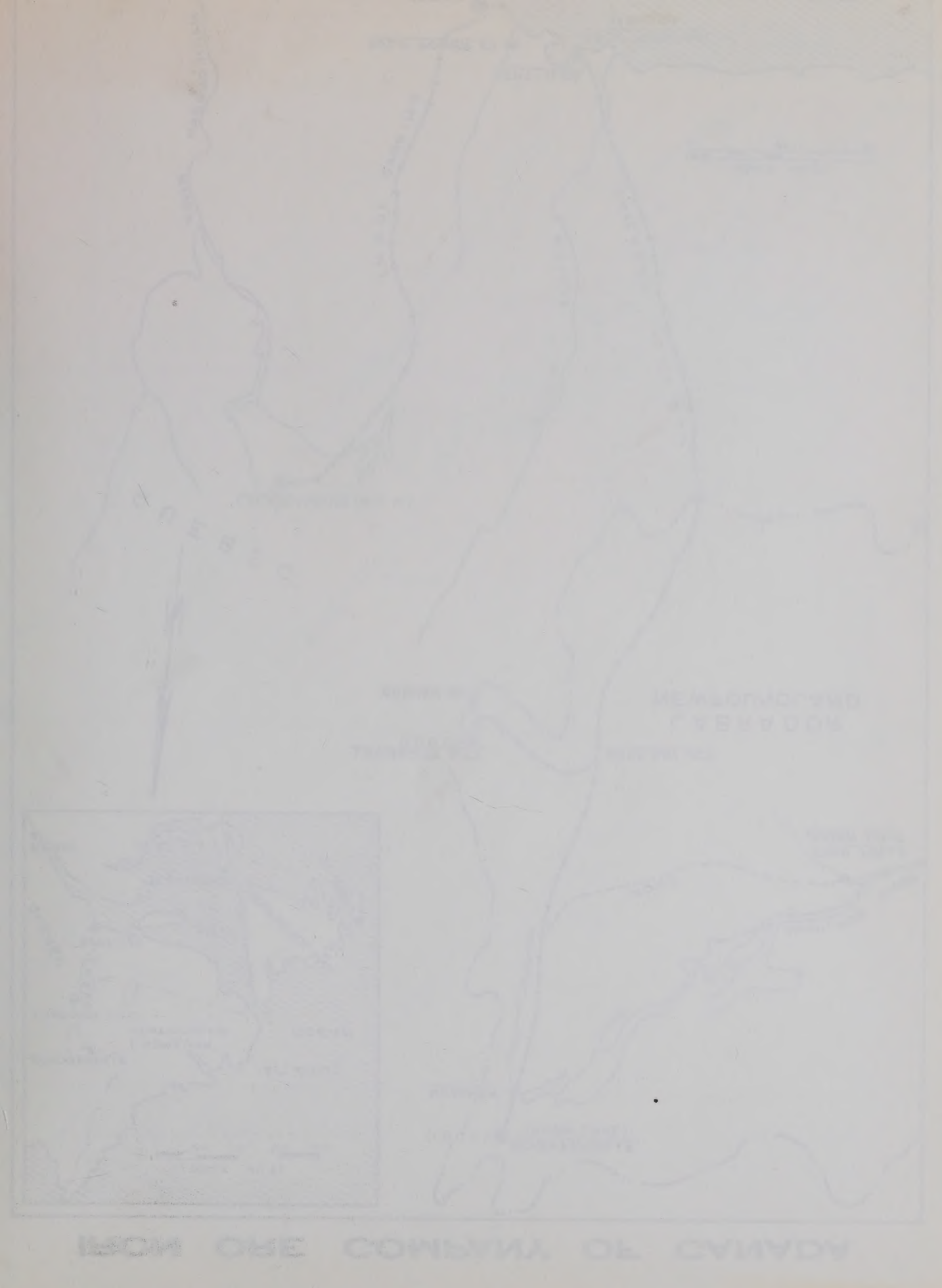
SEPT-ILES

GULF POWER Co.

DOCK TERMINAL (I.O.C.C.)

PORT CARTIER

GULF OF ST. LAWRENCE



IOCC